

What is claimed is:

1. A coherent optical beam modulating device comprising:
an optical modulator array, where said optical modulator array includes an
asymmetric stepped quantum well doped with electrons, wherein the modulator
array operates as at least one of a phase modulator and a light intensity modulator
base upon a voltage bias applied across the modulator array.
2. The coherent optical beam modulating device according to claim 1, wherein an
excited state of the stepped quantum well changes with the voltage bias.
3. The coherent optical beam modulating device according to claim 2, wherein the
asymmetric stepped quantum well is a hybridized array.
4. The coherent optical beam modulating device according to claim 3, where the
hybridized array includes a plurality of pixels arranged in a periodic pattern.
5. The coherent optical beam modulating device according to claim 4, where the
grating has a waffle pattern, where said waffle pattern is oriented at 45° with
respect to the pixel edges.
6. The coherent optical beam modulating device according to claim 3, where said
hybridized array uses a finite size of pixels with a finite number of grating periods.
7. The coherent optical beam modulating device according to claim 3, where the
hybridized array includes a plurality of wet etched pixels.

8. The coherent optical beam modulating device according to claim 2, wherein the asymmetric stepped quantum well is at least one of a linear array, a two dimensional array and a reflective array.
9. A system for coherent optical beam modulating comprising:
 - 5 a coherent optical signal, where the optical signal is at least one of a transmitted signal and a reflected signal; and
 - at least one modulating array capable of reflecting and transmitting the optical signal, where the at least one modulating array continuously affects the optical signal with respect to a voltage bias applied across the at least one modulating
 - 10 array.
10. The system for coherent optical beam modulating according to claim 9, where the at least one array includes an asymmetric stepped quantum well.
11. The system for coherent optical beam modulating according to claim 9, where the at least one array is a hybridized array, where the hybridized array includes a
- 15 plurality of pixels that define a grating.
12. The system for coherent optical beam modulating according to claim 11, where the hybridized array includes a plurality of wet etched pixels that define a grating.
13. The system for coherent optical beam modulating according to claim 9, where the at least one array includes at least one of a linear array, a two dimensional array and
- 20 a reflective array.